

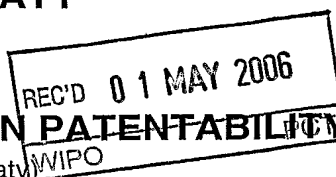
PATENT COOPERATION TREATY


PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference RP/PCT/05-3		FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/BE2005/000047		International filing date (day/month/year) 06.04.2005	Priority date (day/month/year) 14.04.2004	
International Patent Classification (IPC) or national classification and IPC INV. E03F5/08 B01D50/00 B01D53/04				
Applicant STUDOR S.A.				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau) a total of 9 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand 04.11.2005		Date of completion of this report 28.04.2006		
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized officer Bogaerts, M Telephone No. +31 70 340-2335		



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/BE2005/000047

Box No. I Basis of the report

1. With regard to the **language**, this report is based on
- ☒ the international application in the language in which it was filed
 - ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of:
 - ☐ international search (under Rules 12.3(a) and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4(a))
 - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

Description, Pages

1-11 as originally filed

Claims, Numbers

1-27 received on 04.11.2005 with letter of 04.11.2005

Drawings, Sheets

1/5-5/5 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/BE2005/000047

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-27
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-27
Industrial applicability (IA)	Yes: Claims	1-27
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V:

Reference is made to the following documents:

D1: WO-A-03/069081

D2: DE-A-3537367

1. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of independent claims 1 and 14 does not involve an inventive step in the sense of Article 33(3) PCT.
 - 1.1 The subject-matter of claims 1 and 14 differs from D1 only in that the odour absorbing (meant is apparently adsorbing) means are situated both in the first and second flow path portions, whereas in 1 only the second flow path portion (400) contains charcoal.
A possible advantage might be an increased adsorbing capacity.
 - 1.2 The problem of increasing the odour adsorbing capacity of the venting system has already been solved in the same way by the system of D2. Apart from being obvious per se for a skilled person to increase the adsorbing capacity by putting adsorbing means in both flow path portions, such a solution has already been proposed by D2.
2. Dependent claims 2-13 and 15-26 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step:
The additional technical features are either known from documents D1 and/or D2 or obvious for a skilled person. Their inclusion into the system and method of D1 would not involve an inventive skill.
3. The same arguments apply, mutatis mutandis, with respect to claim 27. D1 relates to a vent for a septic system (=waste treatment system).

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/BE2005/000047

Amended claims

1. An air venting system for a gas exhaust conduit of a waste containing system selected from the group consisting of waste treatment system, waste conveying system and substantially closed waste container, said system comprising :
- 5 - a body defining an inner chamber; said body having at least one inlet opening intended for receiving gases from the gas exhaust conduit and at least one outlet opening intended for releasing gases out of the body, and
- 10 - at least one odor absorbing means placed in the inner chamber, said odor absorbing means having (a) an inlet surface through which gas from the waste containing system enters into the odor absorbing means and (b) an exhaust surface through which gas from the waste containing system flows out of the odor absorbing means after flowing through at least a portion of said odor absorbing means,
- 15 whereby the system is adapted for defining a gas flowing path between the inlet surface and the exhaust surface of the odor absorbing means, said flowing path in the odor absorbing means having at least a first upwards flow path portion with a first flow direction defined by at least one vector and a second downwards flow path portion with a second flow direction defined by at least one vector, whereby at
- 20 least one vector of the second flow direction is opposite to a vector of the first flow direction, [.] and

~~2. The air venting system of claim 1, in which the system is adapted for defining a gas flowing path between the inlet opening and the outlet opening, said flowing path defining at least a upwards flow path portion and a downwards flow path portion in the odor absorbing means.~~

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~~3. The air venting system of claim 1, in which the odor absorbing means is placed in the inner chamber so as to define a volume free of odor absorbing means, whereby gas flowing from the inlet opening towards the outlet opening flows at least partly from the inlet opening through a portion of the odor absorbing means towards the volume free of odor absorbing means, and through another portion of~~

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the odor absorbing means from the volume free of the odor absorbing means towards the outlet opening.

2. The air venting system of claim 1, in which the inner chamber is defined by at least one wall, and in which the odor absorbing means is placed in the inner chamber so as to define between the said at least one wall of the chamber and the odor absorbing means a space free of odor absorbing means but closed by said odor absorbing means, whereby gas flows in or out said space only through the odor absorbing means, whereby gas flowing from the inlet opening towards the outlet opening flows at least partly from the inlet opening through a portion of the odor absorbing means towards the volume free of odor absorbing means, and through another portion of the odor absorbing means from the volume free of the odor absorbing means towards the outlet opening.

3. The air venting system of claim 1, in which the odor absorbing means is placed in the inner chamber so as to define a volume free of odor absorbing means, whereby gas flowing from the inlet opening towards the outlet opening flows at least partly according to an upwards flow path from the inlet surface of the odor absorbing means and through a portion of the odor absorbing means towards the volume free of odor absorbing means, and at least partly according to a downwards path from the volume free of the odor absorbing means through another portion of the odor absorbing means towards the exhaust surface thereof.

4. The air venting system of claim 1, in which the inner chamber is defined by at least one wall, and in which the odor absorbing means is placed in the inner chamber so as to define between the said at least one wall of the chamber and the odor absorbing means a space free of odor absorbing means but closed by said odor absorbing means, whereby gas flows in or out said space only through the odor absorbing means, whereby gas flowing from the inlet opening towards the outlet opening flows at least partly upwardly from the inlet opening through a portion of the odor absorbing means towards the volume free of odor absorbing means, and at

least partly downwardly through another portion of the odor absorbing means from the volume free of the odor absorbing means towards the outlet opening.

5. The air venting system of claim 1, in which the odor absorbing means is a charcoal containing absorbing means.

6. The air venting system of claim 1, in which the odor absorbing means has an inlet surface and an exhaust surface, whereby gas flowing from the inlet opening towards the outlet opening flows in the odor absorbing means through the inlet surface and outlet the odor absorbing means through the exhaust surface, whereby the exhaust surface is at least greater than the inlet surface.

7. The air venting system of claim 1, in which the odor absorbing means has an inlet surface and an exhaust surface, whereby gas flowing from the inlet opening towards the outlet opening flows in the odor absorbing means through the inlet surface and outlet the odor absorbing means through the exhaust surface, whereby the exhaust surface is greater than 1.5 times the inlet surface.

8. The air venting system of claim 1, in which the odor absorbing means has an inlet surface and an exhaust surface, whereby gas flowing from the inlet opening towards the outlet opening flows in the odor absorbing means through the inlet surface and outlet the odor absorbing means through the exhaust surface, whereby the exhaust surface is comprised between 1.5 and 5 times the inlet surface.

9. The air venting system of claim 1, said system comprising a tubular body defined by a cylindrical wall and extending between a bottom end up to a top end, a cover cooperating with the top end of the tubular body to form a chamber extending above the top end of the tubular body and associated with a peripheral channel extending outlet the cylindrical wall of the tubular body, whereby the bottom end of the tubular body defines the inlet opening, while the peripheral channel is provided with at least one outlet opening, and whereby the odor absorbing means is located at least partly in the chamber.

10. The air venting system of claim 1, said system comprising a tubular body defined by a cylindrical wall and extending between a bottom end up to a top end, a cover cooperating with the top end of the tubular body to form a chamber
5 extending above the top end of the tubular body and associated with a peripheral channel extending outlet the cylindrical wall of the tubular body , whereby the bottom end of the tubular body defines the inlet opening, while the peripheral channel is provided with at least one outlet opening, and whereby the odor absorbing means is located as least partly in the chamber, as well as partly in the
10 peripheral channel.

11. The air venting system of claim 1, said system comprising a tubular body defined by a cylindrical wall and extending between a bottom end up to a top end, a cover cooperating with the top end of the tubular body to form a chamber
15 extending above the top end of the tubular body and associated with a peripheral channel extending outlet the cylindrical wall of the tubular body , whereby the bottom end of the tubular body defines the inlet opening, while the peripheral channel is provided with at least one outlet opening, and whereby the odor absorbing means is located as least partly in the chamber, as well as partly as in the
20 tubular body.

12. The air venting system of claim 1, said system comprising a tubular body defined by a cylindrical wall and extending between a bottom end up to a top end, a cover cooperating with the top end of the tubular body to form a chamber
25 extending above the top end of the tubular body and associated with a peripheral channel extending outlet the cylindrical wall of the tubular body, whereby the bottom end of the tubular body defines the inlet opening, while the peripheral channel is provided with at least one outlet opening, and whereby the odor absorbing means is located as least partly in the chamber, as well as partly as in the
30 tubular body and at least partly in the peripheral channel.

13. The air venting system of claim 14, in which the odor absorbing means has the form of a body, said body having a circular groove in which the top end of the tubular body is introduced.

5 14. A process for absorbing odor exhausted through an outlet of a gas exhaust conduit of a waste containing system selected from the group consisting of waste treatment system, waste conveying system and substantially closed waste container, in which the outlet of said gas exhaust conduit is provided with a system comprising :

- 10 - a body defining an inner chamber; said body having at least one inlet opening intended for receiving gases from the gas exhaust conduit and at least one outlet opening intended for releasing gases out of the body, and
- at least one odor absorbing means placed in the inner chamber, said odor absorbing means having (a) an inlet surface through which gas from the waste
- 15 containing system enters into the odor absorbing means and (b) an exhaust surface through which gas from the waste containing system flows out of the odor absorbing means after flowing through at least a portion of said odor absorbing means,

whereby the system is adapted for defining a gas flowing path between the inlet

20 surface and the exhaust surface of the odor absorbing means, said flowing path in the odor absorbing means having at least a first upwards flow path portion with a first flow direction defined by at least one vector and a second downwards flow path portion with a second flow direction defined by at least one vector, whereby at least one vector of the second flow direction is opposite to a vector of the first flow

25 direction, and [.]

~~17. The process of claim 16, in which the system is adapted for defining a gas flowing path between the inlet opening and the outlet opening, said flowing path defining at least a upwards flow path portion and a downwards flow path portion in~~

30 ~~the odor absorbing means.~~

18. ~~The process of claim 16, in which the odor absorbing means is placed in the inner chamber so as to define a volume free of odor absorbing means, whereby gas flowing from the inlet opening towards the outlet opening flows at least partly from the inlet opening through a portion of the odor absorbing means towards the~~
5 ~~volume free of odor absorbing means, and through another portion of the odor absorbing means from the volume free of the odor absorbing means towards the outlet opening.~~

15. The process of claim 14, in which the odor absorbing means is placed in the
10 inner chamber so as to define a volume free of odor absorbing means, whereby gas flowing from the inlet opening towards the outlet opening flows at least partly according to an upwards flow path from the inlet surface of the odor absorbing means and through a portion of the odor absorbing means towards the volume free
15 of odor absorbing means, and at least partly according to a downwards path from the volume free of the odor absorbing means through another portion of the odor absorbing means towards the exhaust surface thereof.

16. The process of claim 14, in which the inner chamber is defined by at least one wall, and in which the odor absorbing means is placed in the inner chamber so as to
20 define between the said at least one wall of the chamber and the odor absorbing means a space free of odor absorbing means but closed by said odor absorbing means, whereby gas flows in or out said space only through the odor absorbing means, whereby gas flowing from the inlet opening towards the outlet opening flows at least partly from the inlet opening through a portion of the odor absorbing
25 means towards the volume free of odor absorbing means, and through another portion of the odor absorbing means from the volume free of the odor absorbing means towards the outlet opening.

17. The process of claim 14, in which the inner chamber is defined by at least one
30 wall, and in which the odor absorbing means is placed in the inner chamber so as to define between the said at least one wall of the chamber and the odor absorbing means a space free of odor absorbing means but closed by said odor absorbing

means, whereby gas flows in or out said space only through the odor absorbing means, whereby gas flowing from the inlet opening towards the outlet opening flows at least partly upwardly from the inlet opening through a portion of the odor absorbing means towards the volume free of odor absorbing means, and at least
5 partly downwardly through another portion of the odor absorbing means from the volume free of the odor absorbing means towards the outlet opening.

18. The process of claim 14, in which the odor absorbing means is a charcoal containing absorbing means.

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19. The process of claim 14, in which the odor absorbing means has an inlet surface and an exhaust surface, whereby gas flowing from the inlet opening towards the outlet opening flows in the odor absorbing means through the inlet surface and outlet the odor absorbing means through the exhaust surface, whereby
15 the exhaust surface is at least greater than the inlet surface.

20. The process of claim 14, in which the odor absorbing means has an inlet surface and an exhaust surface, whereby gas flowing from the inlet opening towards the outlet opening flows in the odor absorbing means through the inlet
20 surface and outlet the odor absorbing means through the exhaust surface, whereby the exhaust surface is greater than 1.5 times the inlet surface.

21. The process of claim 14, in which the odor absorbing means has an inlet surface and an exhaust surface, whereby gas flowing from the inlet opening
25 towards the outlet opening flows in the odor absorbing means through the inlet surface and outlet the odor absorbing means through the exhaust surface, whereby the exhaust surface is comprised between 1.5 and 5 times the inlet surface.

22. The process of claim 14, in which the system comprises a tubular body defined
30 by a cylindrical wall and extending between a bottom end up to a top end, a cover cooperating with the top end of the tubular body to form a chamber extending above the top end of the tubular body and associated with a peripheral channel

extending outlet the cylindrical wall of the tubular body , whereby the bottom end of the tubular body defines the inlet opening, while the peripheral channel is provided with at least one outlet opening, and whereby the odor absorbing means is located at least partly in the chamber.

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23. The process of claim 14, in which the system comprises a tubular body defined by a cylindrical wall and extending between a bottom end up to a top end, a cover cooperating with the top end of the tubular body to form a chamber extending above the top end of the tubular body and associated with a peripheral channel
10 extending outlet the cylindrical wall of the tubular body , whereby the bottom end of the tubular body defines the inlet opening, while the peripheral channel is provided with at least one outlet opening, and whereby the odor absorbing means is located as least partly in the chamber, as well as partly in the peripheral channel.

15 24. The process of claim 14, in which the system comprises a tubular body defined by a cylindrical wall and extending between a bottom end up to a top end, a cover cooperating with the top end of the tubular body to form a chamber extending above the top end of the tubular body and associated with a peripheral channel
20 extending outlet the cylindrical wall of the tubular body , whereby the bottom end of the tubular body defines the inlet opening, while the peripheral channel is provided with at least one outlet opening, and whereby the odor absorbing means is located as least partly in the chamber, as well as partly as in the tubular body.

25 25. The process of claim 14, in which the system comprising a tubular body defined by a cylindrical wall and extending between a bottom end up to a top end, a cover cooperating with the top end of the tubular body to form a chamber
extending above the top end of the tubular body and associated with a peripheral channel extending outlet the cylindrical wall of the tubular body , whereby the
bottom end of the tubular body defines the inlet opening, while the peripheral
30 channel is provided with at least one outlet opening, and whereby the odor absorbing means is located as least partly in the chamber, as well as partly as in the tubular body and at least partly in the peripheral channel.

26. The process of claim 25, in which the odor absorbing means has the form of a body, said body having a circular groove in which the top end of the tubular body is introduced.

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27. A waste containing system selected from the group consisting of waste treatment system, waste conveying system and substantially closed waste container, said waste containing system being provided with at least one gas exhaust conduit provided with an air venting system according to any one of the
10 claims 1 to 13.